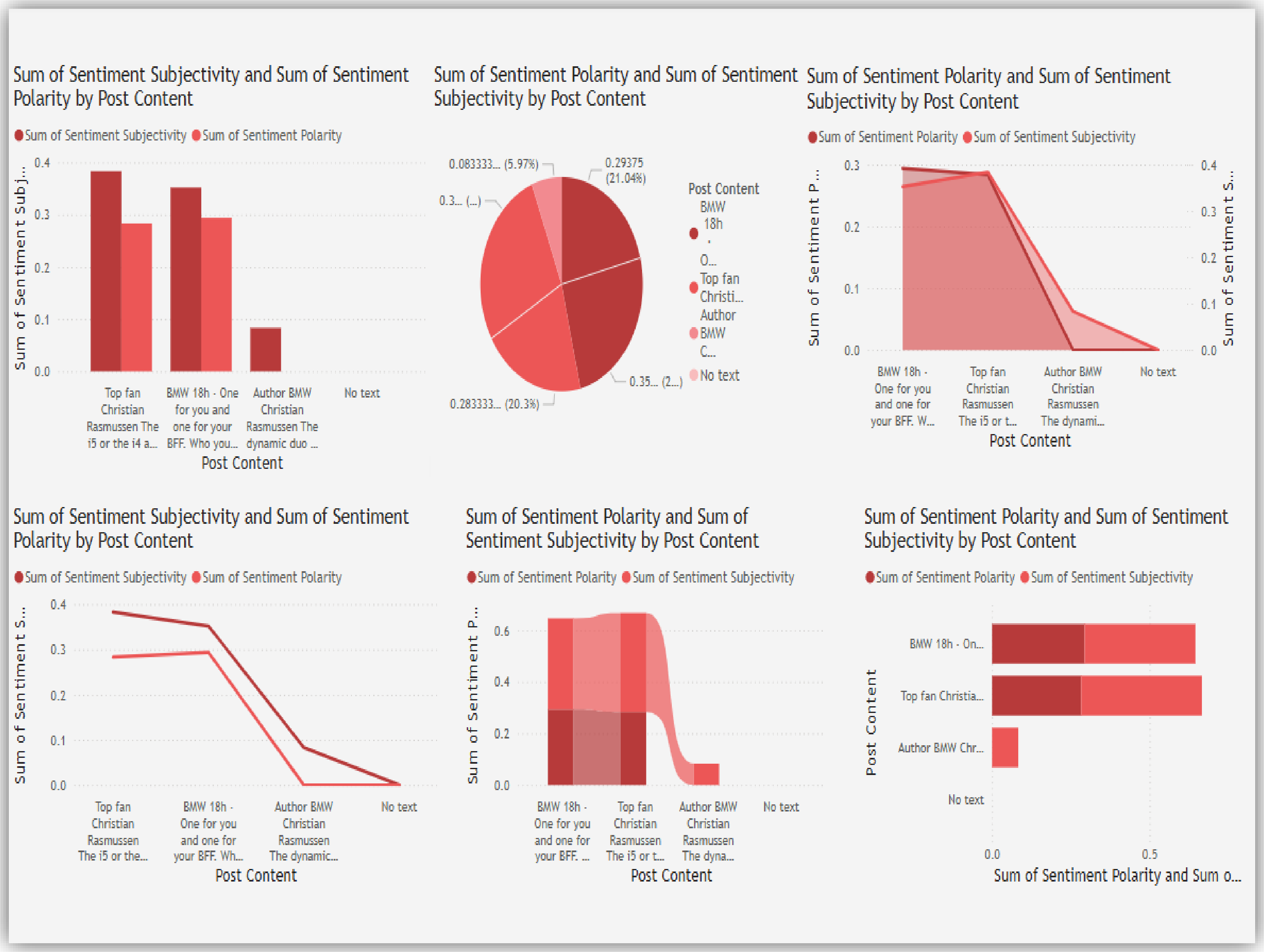
Experiment no.7

Aim: Develop a dashboard and reporting tool based on real time social media data.

Code:
```
import time
import pandas as pd
import streamlit as st
from selenium import webdriver
from selenium.webdriver.chrome.service import Service
from selenium.webdriver.common.by import By
from selenium.webdriver.common.keys import Keys
from selenium.webdriver.chrome.options import Options
from webdriver_manager.chrome import ChromeDriverManager
from textblob import TextBlob

# --- FUNCTIONS ---

def login_facebook(email, password, driver):
    driver.get("https://www.facebook.com/login")
    time.sleep(3)
    email_input = driver.find_element(By.ID, "email")
    password_input = driver.find_element(By.ID, "pass")
    email_input.send_keys(email)
    password_input.send_keys(password)
    driver.find_element(By.NAME, "login").click()
    time.sleep(5)  # Wait for login to complete

def scroll_down(driver, scrolls=10, delay=3):
    for _ in range(scrolls):
        driver.execute_script("window.scrollTo(0, document.body.scrollHeight);")
        time.sleep(delay)

def scrape_facebook_posts(page_url, driver, max_posts=10):
    driver.get(page_url)
    time.sleep(5)

    # Scroll down multiple times to load posts
    scroll_down(driver, scrolls=10, delay=3)

    # Use XPath targeting posts with role='article' which typically represent posts
    posts = driver.find_elements(By.XPATH, "//div[@role='article']")
    print(f"🔎 Found {len(posts)} posts on page")

    posts_data = []
    count = 0
    for post in posts:
        if count >= max_posts:
            break
        try:
            # Extract the text content of the post
            content = post.text.strip()
            if not content:
                try:
                    content = post.find_element(By.XPATH,
".//div[@dir='auto']").text.strip()
                except Exception as alt_e:
                    content = "No text"

            # Perform sentiment analysis using TextBlob
            blob = TextBlob(content)
            polarity = blob.sentiment.polarity  # -1 to 1, where -1 is very negative
and 1 is very positive
            subjectivity = blob.sentiment.subjectivity  # 0 (objective) to 1
(subjective)

            posts_data.append({
                "Post Content": content,
                "Sentiment Polarity": polarity,
                "Sentiment Subjectivity": subjectivity
            })
            count += 1
        except Exception as e:
            print("Error extracting a post:", e)
            continue
    return pd.DataFrame(posts_data)

def create_dashboard(df):
    st.title("📊 Facebook Cars Page Sentiment Analytics")
    st.write("Extracted Facebook Posts with Sentiment Analysis:")
    st.dataframe(df)
    st.write("Data saved in facebook_cars_sentiment_cleaned.csv")

# --- MAIN EXECUTION ---
```

```
if __name__ == "__main__":
    # Replace with your actual Facebook credentials and target page URL:
    FB_EMAIL = "siddhikatkar200@gmail.com"      # Replace with your Facebook email
    FB_PASSWORD = "siddhi8077"             # Replace with your Facebook password
    PAGE_URL = "https://www.facebook.com/BMW"   # Replace with your target cars
page URL

    chrome_options = Options()
    chrome_options.add_argument("--headless")   # Remove this argument if you want
to see the browser window
    chrome_options.add_argument("--disable-gpu")
    chrome_options.add_argument("--no-sandbox")

    service = Service(ChromeDriverManager().install())
    driver = webdriver.Chrome(service=service, options=chrome_options)

    # Log in to Facebook
    login_facebook(FB_EMAIL, FB_PASSWORD, driver)

    # Scrape posts and perform sentiment analysis
    df_posts = scrape_facebook_posts(PAGE_URL, driver, max_posts=10)
    driver.quit()

    # Save the scraped data to CSV
    raw_csv = "facebook_cars_sentiment.csv"
    df_posts.to_csv(raw_csv, index=False)
    print(f"✅ Data saved to {raw_csv}")

    # Optionally, clean the data (replace N/A if necessary, though here it's
unlikely as we use numeric sentiment scores)
    df_posts.replace("N/A", "", inplace=True)
    cleaned_csv = "facebook_cars_sentiment_cleaned.csv"
    df_posts.to_csv(cleaned_csv, index=False)
    print(f"✅ Cleaned data saved to {cleaned_csv}")

    # Display the dashboard using Streamlit
    create_dashboard(df_posts)
```

Output:


Sum of Sentiment Subjectivity and Sum of Sentiment Polarity by Post Content
● Sum of Sentiment Subjectivity ● Sum of Sentiment Polarity
Sum of Sentiment Subj...
0.4
0.3
0.2
0.1
0.0
Top fan Christian Rasmussen The i5 or the i4 a...
BMW 18h - One for you and one for your BFF. Who you...
Author BMW Christian Rasmussen The dynamic duo ...
No text
Post Content
Sum of Sentiment Polarity and Sum of Sentiment Subjectivity by Post Content
0.083333... (5.97%)
0.29375 (21.04%)
0.3... (...)
0.35... (2...)
0.283333... (20.3%)
Post Content
● BMW 18h - O...
● Top fan Christi...
● Author BMW C...
● No text
Sum of Sentiment Polarity and Sum of Sentiment Subjectivity by Post Content
● Sum of Sentiment Polarity ● Sum of Sentiment Subjectivity
Sum of Sentiment P...
Sum of Sentiment S...
0.3
0.2
0.1
0.0
0.4
0.3
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BMW 18h - One for you and one for your BFF. W...
Top fan Christian Rasmussen The i5 or t...
Author BMW Christian Rasmussen The dynami...
No text
Post Content
Sum of Sentiment Subjectivity and Sum of Sentiment Polarity by Post Content
● Sum of Sentiment Subjectivity ● Sum of Sentiment Polarity
Sum of Sentiment S...
0.4
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Top fan Christian Rasmussen The i5 or the...
BMW 18h - One for you and one for your BFF. Wh...
Author BMW Christian Rasmussen The dynamic...
No text
Post Content
Sum of Sentiment Polarity and Sum of Sentiment Subjectivity by Post Content
● Sum of Sentiment Polarity ● Sum of Sentiment Subjectivity
Sum of Sentiment P...
0.6
0.4
0.2
0.0
BMW 18h - One for you and one for your BFF. ...
Top fan Christian Rasmussen The i5 or t...
Author BMW Christian Rasmussen The dyna...
No text
Post Content
Sum of Sentiment Polarity and Sum of Sentiment Subjectivity by Post Content
● Sum of Sentiment Polarity ● Sum of Sentiment Subjectivity
Post Content
BMW 18h - On...
Top fan Christia...
Author BMW Chr...
No text
0.0
0.5
Sum of Sentiment Polarity and Sum o...